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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,490	01/21/2004	Akira Tokai	1082.1066	3236
21171	7590	11/02/2004	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			COLON, GERMAN	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/760,490	Applicant(s) TOKAI ET AL.	
	Examiner German Colón	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 8-10 is/are rejected.
- 7) ☒ Claim(s) 4-7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/21/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

The Brief Description of the Drawings includes a description of Figs. 4 and 6; however, both Figures comprise parts (a) and (b). The Brief Description should be amended to recite Figs. 4(a) and 4(b), and Figs. 6(a) and 6(b), instead of Fig. 4 and Fig. 6, respectively.

The specification should disclose in the first paragraph that the instant application is a continuation of a PCT application.

Appropriate correction is required.

Claim Objections

2. Claim 9 is objected to because of the following informalities:

Line 7 has a typographical error, "havig" should be "having".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1, 2, 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green et al. (US 6,612,889) in view of Pfaender et al. (US 3,602,754).

Regarding claim 1, Green discloses a method of forming a phosphor layer in a gas discharge tube (see at least Figs. 1 and 2), comprising:

forming a phosphor layer 300 (see Col. 9, line 14) on a surface of a supporting member 40 (50); and

inserting into the gas discharge tube the resulting phosphor layer supporting member having the phosphor layer thereon (see Figs. 3A-3J). Green discloses the supporting member having a cylindrical shape (see Col. 7, line 61 and Col. 10, line 52) but is silent regarding the limitation of the method comprising “drawing a mother material to fabricate the supporting member”.

However, in the same field of endeavor, Pfaender discloses a method of forming cylindrical members for gas discharge devices comprising drawing a mother material to fabricate said cylindrical members and teaches said method to provide complex glass panel structures with a high degree of precision and at relatively low cost; said structural precision reduces variations of operating or discharge voltages in the plurality of discharge regions of the device; while eliminates possible structural stresses due to fluctuation in ambient pressure differentials (see Col. 2, lines 1-4 and 25-31). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the supporting members of Green by the method of drawing a mother material, in order to provide complex glass panel structures with a high degree of precision and at relatively low cost; said structural precision reduces variations of operating or

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discharge voltages in the plurality of discharge regions of the device; while eliminates possible structural stresses due to fluctuation in ambient pressure differentials.

Regarding claim 2, Green-Pfaender discloses the phosphor layer formation step following the supporting member fabrication step.

Regarding claim 3, Green-Pfaender discloses the mother material being made of glass, and the fabrication step of the supporting member from the glass mother material comprises heating and drawing of the glass mother material at a temperature ranging between the softening point and the operating point of the glass mother material (see '754, Col. 5, lines 50-53).

Regarding claim 8, Green-Pfaender discloses the mother material being made of low-melting glass, the method further comprising the step of roll-forming or press-forming the mother material while heating (see Fig. 4 and Col. 5, lines 50-53 of '754).

5. Claims 1-3 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akita et al. (JP 2002-117810) in view of Pfaender et al. (US 3,602,754).

Referring to claim 1, Akita discloses a method of forming a phosphor layer in a gas discharge tube (see at least Figs. 1 and 4), comprising:

forming a phosphor layer 4 on a surface of a supporting member 7 (3); and

inserting into the gas discharge tube the resulting phosphor layer supporting member having the phosphor layer thereon (see Figs. 1-4). Akita discloses the supporting member having a cylindrical shape (see Fig. 5c) but is silent regarding the limitation of the method comprising "drawing a mother material to fabricate the supporting member".

However, in the same field of endeavor, Pfaender discloses a method of forming cylindrical members for gas discharge devices comprising drawing a mother material to fabricate said cylindrical members and teaches said method to provide complex glass structures with a high degree of precision and at relatively low cost; said structural precision reduces variations of operating or discharge voltages among different devices; while eliminates possible structural stresses due to fluctuation in ambient pressure differentials (see Col. 2, lines 1-4 and 25-31). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the supporting members of Akita by the method of drawing a mother material, in order to provide complex glass structures with a high degree of precision and at relatively low cost; said structural precision reduces variations of operating or discharge voltages among different devices; while eliminates possible structural stresses due to fluctuation in ambient pressure differentials.

Referring to claim 2, Akita-Pfaender discloses the phosphor layer formation step following the supporting member fabrication step.

Referring to claim 3, Akita-Pfaender discloses the mother material being made of glass, and the fabrication step of the supporting member from the glass mother material comprises heating and drawing of the glass mother material at a temperature ranging between the softening point and the operating point of the glass mother material (see '754, Col. 5, lines 50-53).

Referring to claim 8, Akita-Pfaender discloses the mother material being made of low-melting glass, the method further comprising the step of roll-forming or press-forming the mother material while heating (see Fig. 4 and Col. 5, lines 50-53 of '754).

Regarding claim 9, Akita-Pfaender discloses a method of forming a phosphor layer supporting member for supporting a phosphor layer in a gas discharge tube (see at least Figs. 1 and 4), comprising:

drawing a mother material having an almost arc-shaped cross section similar to an outer shape of a gas discharge tube to fabricate a supporting member, the supporting member having an almost arc-shaped cross section of a size that is insertable in the gas discharge tube so as to form a phosphor layer on an arc-shaped internal surface of the supporting member (see JP '810, Figs. 4 and 5(a) in view of '754). Same reasons for combining stated in claim 1 apply.

Regarding claim 10, the claim is rejected over the reasons stated in the rejection of claim 3.

Allowable Subject Matter

6. Claims 4-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

The references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in claim 4, and specifically comprising the limitation of "the mother material being made of metal and comprising elongation of the metal mother material at room temperature".

Claims 5-7 are allowable for the reasons given in claim 4, because of their dependency status from claim 4.

Prior Art of Record

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Shirakawa (US 6,156,141) discloses a method of making a discharge device comprising forming a phosphor in a bar-shaped member, and coating it on the display.

Kim et al. (US 5,164,633) discloses a PDP comprising arc-shaped electrodes having a phosphor coated thereof.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 571-272-2451. The examiner can normally be reached on Monday thru Thursday, from 8:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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